1. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-10x^2 + 9x + 8 = 0$$

A. $x_1 \in [-20.5, -17.9]$ and $x_2 \in [20, 21.7]$

B. $x_1 \in [-2.6, -0.9]$ and $x_2 \in [-1.4, 1.1]$

C. $x_1 \in [-15.1, -13.1]$ and $x_2 \in [3.9, 7.3]$

D. $x_1 \in [-0.7, 0.3]$ and $x_2 \in [0.7, 2.3]$

E. There are no Real solutions.

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2. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 - 38x + 24 = 0$$

A. $x_1 \in [1.18, 1.28]$ and $x_2 \in [1.19, 1.53]$

B. $x_1 \in [18, 18.02]$ and $x_2 \in [19.67, 20.4]$

C. $x_1 \in [0.32, 0.41]$ and $x_2 \in [3.97, 4.38]$

D. $x_1 \in [0.57, 0.61]$ and $x_2 \in [2.58, 2.84]$

E. $x_1 \in [0.65, 0.75]$ and $x_2 \in [2.22, 2.5]$

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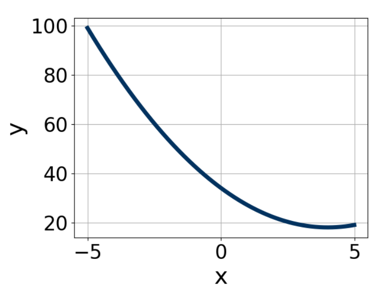
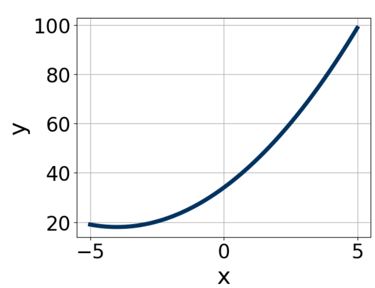
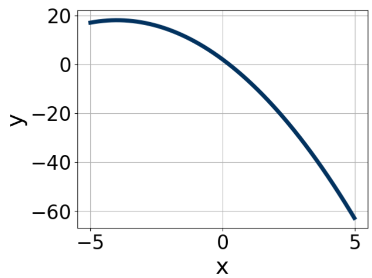
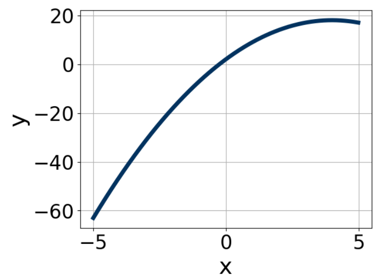
3. Graph the equation below.

$$f(x) = -(x+4)^2 + 18$$

A. 

B. 

C. 

D. 

E. None of the above.

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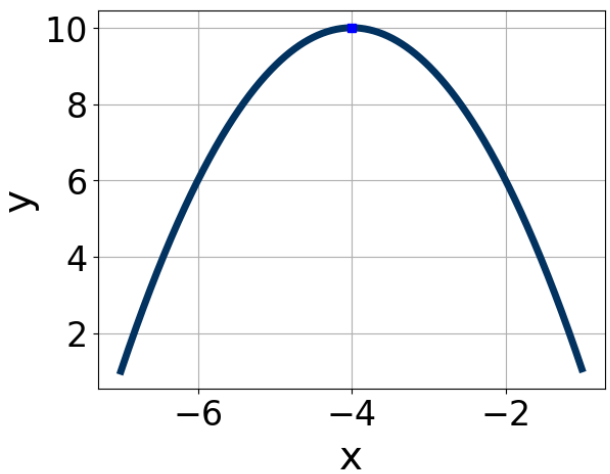
4. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-6, 0], \quad b \in [-9, -7], \text{ and } \quad c \in [-7, -3]$

B. $a \in [-6, 0], \quad b \in [6, 10], \text{ and } \quad c \in [-7, -3]$

C. $a \in [-6, 0], \quad b \in [6, 10], \text{ and } \quad c \in [-27, -24]$

D. $a \in [1, 6], \quad b \in [6, 10], \text{ and } \quad c \in [24, 28]$

E. $a \in [1, 6], \quad b \in [-9, -7], \text{ and } \quad c \in [24, 28]$

---

5. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$54x^2 - 15x - 25$$

A. $a \in [14.9, 21.4], \quad b \in [-10, -2], \quad c \in [1.8, 4.4], \text{ and } \quad d \in [5, 12]$

B. $a \in [1.2, 4.8], \quad b \in [-10, -2], \quad c \in [17, 19], \text{ and } \quad d \in [5, 12]$

C. $a \in [0.2, 1.7], \quad b \in [-46, -43], \quad c \in [0.4, 2.1], \text{ and } \quad d \in [28, 31]$

D. $a \in [4.5, 8.4], \quad b \in [-10, -2], \quad c \in [8.7, 9.5], \text{ and } \quad d \in [5, 12]$

E. None of the above.

---

6. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$20x^2 + 61x + 36 = 0$$

A. $x_1 \in [-5.75, -4.17]$ and $x_2 \in [-0.46, -0.4]$

B. $x_1 \in [-2.42, -2.3]$ and $x_2 \in [-0.77, -0.75]$

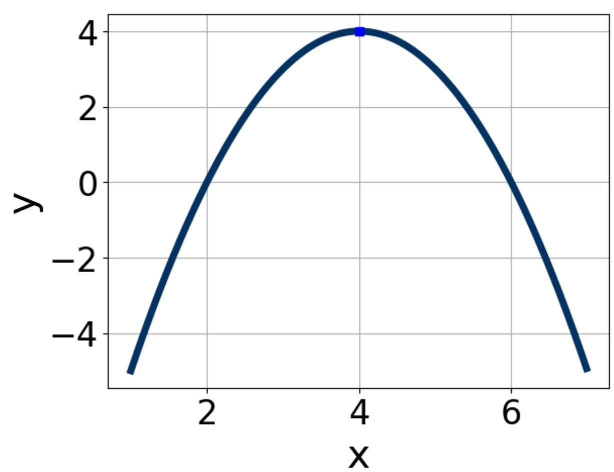
C. $x_1 \in [-45, -44.45]$ and $x_2 \in [-16.02, -15.93]$

D. $x_1 \in [-2.26, -1.94]$ and $x_2 \in [-0.86, -0.79]$

E. $x_1 \in [-9.46, -8.61]$ and $x_2 \in [-0.28, -0.13]$

---

7. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-3, 0], \quad b \in [-10, -7], \text{ and } \quad c \in [-21, -15]$

B. $a \in [0, 3], \quad b \in [-10, -7], \text{ and } \quad c \in [19, 21]$

C. $a \in [0, 3], \quad b \in [8, 12], \text{ and } \quad c \in [19, 21]$

D. $a \in [-3, 0], \quad b \in [8, 12], \text{ and } \quad c \in [-16, -11]$

E. $a \in [-3, 0], \quad b \in [-10, -7], \text{ and } \quad c \in [-16, -11]$

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8. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$15x^2 + 11x - 9 = 0$$

A. $x_1 \in [-3.2, -0.5]$ and $x_2 \in [-0.45, 0.87]$

B. $x_1 \in [-27.7, -24.9]$ and $x_2 \in [25.18, 25.87]$

C. $x_1 \in [-0.9, 1.2]$ and $x_2 \in [0.66, 1.65]$

D. $x_1 \in [-19.3, -17.4]$ and $x_2 \in [7.04, 7.88]$

E. There are no Real solutions.

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9. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$16x^2 + 8x - 15$$

A. $a \in [2.63, 4.72], \quad b \in [-10, 3], \quad c \in [3.77, 5.84], \text{ and } \quad d \in [4, 8]$

B. $a \in [6.46, 9.19], \quad b \in [-10, 3], \quad c \in [1.12, 3.12], \text{ and } \quad d \in [4, 8]$

C. $a \in [0.69, 1.04], \quad b \in [-18, -11], \quad c \in [0.84, 1.66], \text{ and } \quad d \in [15, 22]$

D. $a \in [1.68, 2.6], \quad b \in [-10, 3], \quad c \in [7.22, 8.16], \text{ and } \quad d \in [4, 8]$

E. None of the above.

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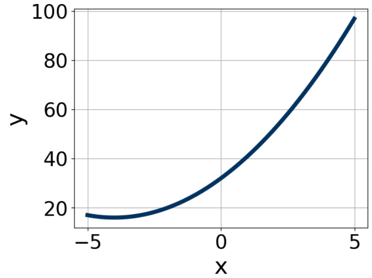
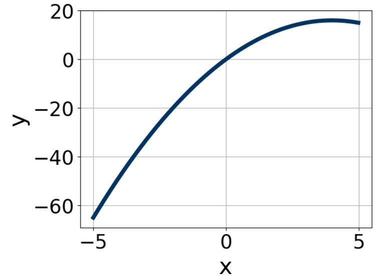
10. Graph the equation below.

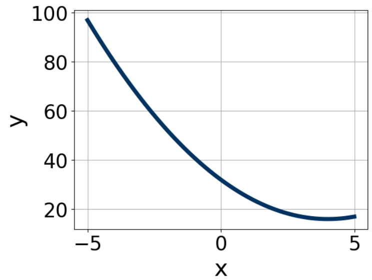
$$f(x) = (x - 4)^2 + 16$$



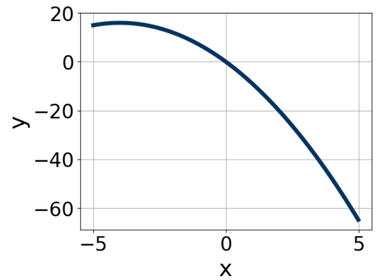
A.



C.



B.



D.

E. None of the above.